



iu-99.ST25.txt
SEQUENCE LISTING

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<120> P193 PROTEINS AND NUCLEIC ACIDS, AND USES THEREOF

<130> IU-99-PCT-US

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<151> 1999-08-23

<160> 13

<170> PatentIn version 3.3

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<211> 5217

<212> DNA

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Asn Gly His Pro Glu Tyr Gln Ile Arg Trp Leu Ile Leu Arg Arg Gly
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ccc Pro 1085	cgt Arg	gag Glu	gca Ala	gca Ala	cct Pro	ccg Pro 1090	gtg Val	gtg Val	gcc Ala	atc Ile	cct Pro 1095	cga Arg	tcc Ser	aag Lys		3355
ggc Gly 1100	agg Arg	aac Asn	aga Arg	atc Ile	cat His	gac Asp 1105	tgg Trp	agc Ser	tac Tyr	ttg Leu	atc Ile 1110	acc Thr	cgg Arg	ggc Gly		3400

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cgG gca Arg Ala 1445	gaa gtg cag ttc ggg Glu Val Gln Phe Gly 1450	ggT cag att ctg cat Gly Gln Ile Leu His 1455	gtg tcc aca Val Ser Thr 4435
gta cag Val Gln 1460	atg tgg ctg ctg ctg Met Trp Leu Leu Leu 1465	cat ctC aac aac caa His Leu Asn Asn Gln 1470	aag gag gtg Lys Glu Val 4480
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 Ala Arg Gly Leu Val Ser Ser Leu Gly Arg Gly Ala Thr Cys Arg
 1595 1600 1605

agc tct gat gtc ctc tcc tgc atc ctg cac ctc ctg gtc aag ggc 4930
 Ser Ser Asp Val Leu Ser Cys Ile Leu His Leu Leu Val Lys Gly
 1610 1615 1620

acg ctg aga cgc cat gac gac cgg ccg cag gtg ctg tac tat gca 4975
 Thr Leu Arg Arg His Asp Asp Arg Pro Gln Val Leu Tyr Tyr Ala
 1625 1630 1635

gtt cct gta act gtg atg gag ccc cac atg gag tcc ctg aac cct 5020
 Val Pro Val Thr Val Met Glu Pro His Met Glu Ser Leu Asn Pro
 1640 1645 1650

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 Gly Ser Ala Gly Pro Asn Pro Pro Leu Thr Phe His Thr Leu Gln
 1655 1660 1665

att cga tcc cgg ggt gtg cct tac gcc tcc tgc act gat aac cac 5110
 Ile Arg Ser Arg Gly Val Pro Tyr Ala Ser Cys Thr Asp Asn His
 1670 1675 1680

acc ttc tcc act ttc cgg tag ccctggatat ggggttgggg gtaggtgagg 5161
 Thr Phe Ser Thr Phe Arg
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Asn Gly His Pro Glu Tyr Gln Ile Arg Trp Leu Ile Leu Arg Arg Gly
 35 40 45

Asp Asp Gly Asp Arg Asp Ser Thr Val Asp Cys Lys Ala Glu His Ile
 50 55 60

Leu Leu Trp Met Ser Asp Asp Glu Ile Tyr Ala Asn Cys His Lys Met
 65 70 75 80

Leu Gly Glu Asn Gly Gln Val Ile Ala Pro Ser Arg Glu Ser Thr Glu
 85 90 95

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Ala Gly Ala Leu Asp Lys Ser Val Leu Gly Glu Met Glu Thr Asp Val
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Lys Ser Leu Ile Gln Arg Ala Leu Arg Gln Leu Glu Glu Cys Val Gly
115 120 125

Thr Val Pro Pro Ala Pro Leu Leu His Thr Val His Val Leu Ser Ala
130 135 140

Tyr Ala Ser Ile Glu Pro Leu Thr Gly Ile Phe Lys Asp Arg Arg Val
145 150 155 160

Val Asn Leu Leu Met His Met Leu Ser Ser Pro Asp Tyr Gln Ile Arg
165 170 175

Trp Ser Ala Gly Arg Met Ile Gln Ala Leu Ser Ser His Asp Ala Gly
180 185 190

Thr Arg Thr Gln Ile Leu Leu Ser Leu Ser Gln Gln Glu Ala Ile Glu
195 200 205

Lys His Leu Asp Phe Asp Ser Arg Cys Ala Leu Leu Ala Leu Phe Ala
210 215 220

Gln Ala Thr Leu Thr Glu His Pro Met Ser Phe Glu Gly Val Gln Leu
225 230 235 240

Pro Gln Val Pro Gly Arg Leu Leu Phe Ser Leu Val Lys Arg Tyr Leu
245 250 255

His Val Thr Phe Leu Leu Asp Arg Leu Asn Gly Asp Ala Gly Asp Gln
260 265 270

Gly Ala Gln Asn Asn Phe Ser Pro Glu Glu Leu Asn Val Gly Arg Gly
275 280 285

Arg Leu Glu Leu Glu Phe Ser Met Ala Met Gly Thr Leu Ile Ser Glu
290 295 300

Leu Val Gln Ala Met Arg Trp Asp Gly Ala Ser Ser Arg Pro Glu Ser
305 310 315 320

Ser Ser Ser Ser Thr Phe Gln Pro Arg Pro Ala Gln Phe Arg Pro Tyr
325 330 335

Thr Gln Arg Phe Arg Arg Ser Arg Arg Phe Arg Pro Arg Ala Ser Phe

340

345

350

Ala Ser Phe Asn Thr Tyr Ala Leu Tyr Val Arg Asp Thr Leu Arg Pro
 355 360 365

Gly Met Arg Val Arg Met Leu Glu Asn Tyr Glu Glu Ile Ala Ala Gly
 370 375 380

Asp Glu Gly Gln Phe Arg Gln Ser Asn Asp Gly Val Pro Pro Ala Gln
 385 390 395 400

Val Leu Trp Asp Ser Thr Gly His Thr Tyr Trp Val His Trp His Met
 405 410 415

Leu Glu Ile Leu Gly Phe Glu Glu Asp Ile Glu Asp Val Ile Asp Ile
 420 425 430

Glu Glu Leu Gln Glu Leu Gly Ala Asn Gly Ala Leu Ser Ile Val Pro
 435 440 445

Pro Ser Gln Arg Trp Lys Pro Ile Thr Gln Leu Phe Ala Glu Pro Tyr
 450 455 460

Val Val Pro Glu Glu Glu Asp Arg Glu Glu Ser Glu Asn Leu Thr Gln
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Ala Glu Trp Trp Glu Leu Leu Phe Phe Ile Arg Gln Leu Ser Glu Ala
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Glu Arg Leu His Ile Val Asp Leu Leu Gln Asp His Leu Glu Glu Glu
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Arg Val Leu Asp Tyr Asp Met Leu Pro Glu Leu Thr Val Pro Val Asp
 515 520 525

Leu Ala Gln Asp Leu Leu Leu Ser Leu Pro Gln Gln Leu Glu Asp Ser
 530 535 540

Ala Leu Arg Asp Leu Phe Ser Cys Ser Val Tyr Arg Lys Tyr Gly Pro
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Glu Val Leu Val Gly His Leu Ser Tyr Pro Phe Val Pro Gly Ala Gln
 565 570 575

Pro Asn Leu Phe Gly Ala Asn Glu Glu Ser Glu Ala Lys Asp Pro Pro
 580 585 590

Leu Gln Ser Ala Ser Pro Ala Leu Gln Arg Leu Val Glu Ser Leu Gly
 595 600 605

Pro Glu Gly Glu Val Leu Val Glu Leu Glu Gln Ala Leu Gly Ser Glu
 610 615 620

Ala Pro Gln Glu Thr Glu Val Lys Ser Cys Leu Leu Gln Leu Gln Glu
 625 630 635 640

Gln Pro Gln Pro Phe Leu Ala Leu Met Arg Ser Leu Asp Thr Ser Ala
 645 650 655

Ser Asn Lys Thr Leu His Leu Thr Val Leu Arg Ile Leu Met Gln Leu
 660 665 670

Val Asn Phe Pro Glu Ala Leu Leu Leu Pro Trp His Glu Ala Met Asp
 675 680 685

Ala Cys Val Thr Cys Leu Arg Ser Pro Asn Thr Asp Arg Glu Val Leu
 690 695 700

Gln Glu Leu Ile Phe Phe Leu His Arg Leu Thr Thr Thr Ser Arg Asp
 705 710 715 720

Tyr Ala Val Ile Leu Asn Gln His Gly Ala Arg Asp Ala Ile Ser Lys
 725 730 735

Val Leu Glu Lys His Arg Gly Lys Leu Glu Leu Ala Gln Glu Leu Arg
 740 745 750

Asp Met Val Ser Lys Cys Glu Lys His Ala His Leu Tyr Arg Lys Leu
 755 760 765

Thr Thr Asn Ile Leu Gly Gly Cys Ile Gln Met Val Leu Gly Gln Ile
 770 775 780

Glu Asp His Arg Arg Thr His Arg Pro Ile Gln Ile Pro Phe Phe Asp
 785 790 795 800

Val Phe Leu Arg Tyr Leu Cys Gln Gly Ser Ser Glu Glu Met Lys Lys
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Asn Arg Tyr Trp Glu Lys Val Glu Val Ser Ser Asn Pro Gln Arg Ala
 820 825 830

Ser Arg Leu Thr Asp Arg Asn Pro Lys Thr Tyr Trp Glu Ser Ser Gly
 835 840 845

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Arg Ala Gly Ser His Phe Ile Thr Leu His Met Arg Pro Gly Val Ile
850 855 860

Ile Arg Gln Leu Thr Leu Leu Val Ala Gly Glu Asp Ser Ser Tyr Met
865 870 875 880

Pro Ala Trp Val Val Val Cys Gly Gly Asn Ser Ile Lys Ser Val Asn
885 890 895

Lys Glu Leu Asn Thr Val Asn Val Met Pro Ser Ala Ser Arg Val Thr
900 905 910

Leu Leu Glu Asn Leu Thr Arg Phe Trp Pro Ile Ile Gln Ile Arg Ile
915 920 925

Lys Arg Cys Gln Gln Gly Gly Ile Asn Thr Arg Ile Arg Gly Leu Glu
930 935 940

Val Leu Gly Pro Lys Pro Thr Phe Trp Pro Val Phe Arg Glu Gln Leu
945 950 955 960

Cys Arg His Thr Arg Leu Phe Tyr Met Val Arg Ala Gln Ala Trp Ser
965 970 975

Gln Asp Ile Ala Glu Asp Arg Arg Ser Leu Leu His Leu Ser Ser Arg
980 985 990

Leu Asn Gly Ala Leu Arg His Glu Gln Asn Phe Ala Glu Arg Phe Leu
995 1000 1005

Pro Asp Met Glu Ala Ala Gln Ala Leu Ser Lys Thr Cys Trp Glu
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Ala Leu Val Ser Pro Leu Val Gln Asn Ile Thr Ser Pro Asp Glu
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Asp Ser Thr Ser Ser Leu Gly Trp Leu Leu Asp Gln Tyr Leu Gly
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Cys Arg Glu Ala Ala Tyr Asn Pro Gln Ser Arg Ala Ala Ala Phe
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Ser Ser Arg Val Arg Arg Leu Thr His Leu Leu Val His Val Glu
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Pro Arg Glu Ala Ala Pro Pro Val Val Ala Ile Pro Arg Ser Lys
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Gln	Lys	Ser	Ser	Ser	Glu	Leu	Phe	Gly	Pro	Arg	Ala	Ala	Phe	Leu
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	1175					1180					1185			
Phe	Leu	Arg	Ala	Ala	His	Val	Lys	Gln	Gln	Phe	Ala	Arg	His	Ile
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Glu	Met	Leu	Ala	Gln	Leu	Gln	Arg	Cys	Leu	Glu	Ser	Val	Leu	Ile
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Phe	Ser	Pro	Leu	Glu	Ile	Ala	Thr	Thr	Phe	Glu	His	Tyr	Tyr	Gln
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His	Tyr	Met	Ala	Asp	Arg	Leu	Leu	Ser	Val	Gly	Ser	Ser	Trp	Leu
	1250					1255					1260			
Glu	Gly	Ala	Val	Leu	Glu	Gln	Ile	Gly	Pro	Cys	Phe	Pro	Ser	Arg
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Gln	Arg	Gln	Phe	His	Val	Tyr	Gln	Leu	Gln	Gln	Leu	Asp	Gln	Glu
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Leu	Leu	Lys	Leu	Glu	Asp	Thr	Glu	Lys	Lys	Ile	Gln	Val	Ala	His
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Glu	Asp	Ser	Gly	Arg	Glu	Asp	Lys	Ser	Lys	Lys	Glu	Glu	Ala	Ile

1325

1330

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Glu	Glu	Arg	Tyr	Tyr	Lys	Gly	Thr	Met	Pro	Glu	Val	Cys	Val	Leu
1370						1375					1380			
Val	Val	Thr	Pro	Arg	Phe	Trp	Pro	Val	Ala	Ser	Val	Cys	Gln	Met
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Asn	His	Tyr	Thr	Asn	Phe	Tyr	Ser	Lys	Ser	Gln	Ser	Arg	Ser	Ser
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1430						1435					1440			
Arg	Ala	Glu	Val	Gln	Phe	Gly	Gly	Gln	Ile	Leu	His	Val	Ser	Thr
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Val	Gln	Met	Trp	Leu	Leu	Leu	His	Leu	Asn	Asn	Gln	Lys	Glu	Val
1460						1465					1470			
Ser	Val	Glu	Ser	Leu	Gln	Ala	Ile	Ser	Glu	Leu	Pro	Pro	Asp	Val
1475						1480					1485			
Leu	His	Arg	Ala	Ile	Gly	Pro	Leu	Thr	Ser	Ser	Arg	Gly	Pro	Leu
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Asp	Leu	Gln	Glu	Gln	Lys	Asn	Val	Pro	Gly	Gly	Val	Leu	Lys	Ile
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Arg	Asp	Asp	Ser	Glu	Glu	Pro	Arg	Pro	Arg	Arg	Gly	Asn	Val	Trp
1520						1525					1530			
Leu	Ile	Pro	Pro	Gln	Thr	Tyr	Leu	Gln	Ala	Glu	Ala	Glu	Glu	Gly
1535						1540					1545			
Arg	Asn	Met	Glu	Lys	Arg	Arg	Asn	Leu	Leu	Asn	Cys	Leu	Val	Val
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Arg Ile Leu Lys Ala His Gly Asp Glu Gly Leu His Val Asp Arg
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Leu Val Tyr Leu Val Leu Glu Ala Trp Glu Lys Gly Pro Cys Pro
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Ala Arg Gly Leu Val Ser Ser Leu Gly Arg Gly Ala Thr Cys Arg
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Ser Ser Asp Val Leu Ser Cys Ile Leu His Leu Leu Val Lys Gly
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Thr Leu Arg Arg His Asp Asp Arg Pro Gln Val Leu Tyr Tyr Ala
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Val Pro Val Thr Val Met Glu Pro His Met Glu Ser Leu Asn Pro
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Gly Ser Ala Gly Pro Asn Pro Pro Leu Thr Phe His Thr Leu Gln
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Thr Phe Ser Thr Phe Arg
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ttc agg gtg ccc ctg ggg ccc ggc tta cat gcc tat cct gat gag ctg 161
 Phe Arg Val Pro Leu Gly Pro Gly Leu His Ala Tyr Pro Asp Glu Leu
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 Ile Arg Gln Arg Val Gly His Asp Gly His Pro Glu Tyr Gln Ile Arg
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 Trp Leu Ile Leu Arg Arg Gly Asp Glu Gly Asp Gly Gly Ser Gly Gln

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Leu	His	Thr	Val	His	Val	Leu	Ser	Ala	Tyr	Ala	Ser	Ile	Glu	Pro	Leu	
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Ser	Leu	Ser	Gln	Gln	Glu	Ala	Ile	Glu	Lys	His	Leu	Asp	Phe	Asp	Ser	
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cgc	tgt	gct	ctg	cta	gca	ctg	ttt	gca	cag	gcc	acg	ctc	tct	gaa	cac	785
Arg	Cys	Ala	Leu	Leu	Ala	Leu	Phe	Ala	Gln	Ala	Thr	Leu	Ser	Glu	His	
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Pro	Met	Ser	Phe	Glu	Gly	Ile	Gln	Leu	Pro	Gln	Val	Pro	Gly	Arg	Val	
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Gln	Leu	Asn	Asp	Ser	Ala	Ala	Glu	Pro	Gly	Ala	Gln	Asn	Thr	Ser	Ala	
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gag Glu	ttc Phe	gca Ala	agt Ser 365	ggc Gly	aat Asn	acc Thr	tat Tyr	gct Ala 370	ttg Leu	tat Tyr	gtg Val	cgg Arg	gac Asp 375	aca Thr	ctg Leu	1217
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gaa Glu	gat Asp	gca Ala	gcc Ala 605	aaa Lys	gtg Val	gaa Glu	gca Ala	aaa Lys 610	gaa Glu	ccc Pro	cca Pro	tct Ser	cag Gln 615	agt Ser	ccc Pro	1937
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gag Glu	gca Ala	ctg Leu 700	ctg Leu	ctc Leu	ccc Pro	tgg Trp	cac His 705	gag Glu	gcc Ala	gtg Val	gat Asp	gcc Ala 710	tgc Cys	atg Met	gcc Ala	2225
tgc Cys 715	ctg Leu	cgg Arg	tcc Ser	cca Pro	aac Asn	act Thr 720	gat Asp	cga Arg	gag Glu	gtg Val	ctc Leu 725	cag Gln	gaa Glu	ctg Leu	att Ile	2273
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cac His	ctg Leu	gga Gly 765	aag Lys	ctg Leu	gag Glu	ctg Leu	gct Ala	cag Gln 770	gag Glu	ctg Leu	cgg Arg	gac Asp 775	atg Met	gtg Val	ttc Phe	2417
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ctg Leu	gga Gly 795	ggc Gly	tgc Cys	atc Ile	cag Gln	atg Met 800	gtg Val	ctg Leu	ggc Gly	cag Gln	atc Ile 805	gaa Glu	gac Asp	cac His	aga Arg	2513

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gac Asp	cac His	aac Asn 860	ccc Pro	aag Lys	acc Thr	tat Tyr	tgg Trp 865	gag Glu	tcc Ser	aac Asn	ggc Gly	agc Ser 870	gcc Ala	ggc Gly	tcc Ser	2705
cac His	tac Tyr 875	atc Ile	acc Thr	ctg Leu	cac His	atg Met 880	cgc Arg	cgg Arg	ggc Gly	atc Ile 885	ctc Leu	atc Ile	agg Arg	caa Gln	ctg Leu	2753
act Thr 890	ctg Leu	ctt Leu	gtg Val	gct Ala	agt Ser 895	gag Glu	gac Asp	tcg Ser	agt Ser	tac Tyr 900	atg Met	ccg Pro	gcc Ala	cga Arg	gtg Val 905	2801
gtg Val	gtg Val	tgc Cys	ggg Gly	ggt Gly 910	gat Asp	agc Ser	act Thr	agc Ser	tct Ser 915	ctt Leu	cac His	acg Thr	gaa Glu	ctc Leu 920	aac Asn	2849
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ctg Leu	acc Thr	cgc Arg 940	ttc Phe	tgg Trp	ccc Pro	atc Ile	atc Ile 945	cag Gln	atc Ile	cgc Arg	ata Ile	aag Lys 950	cgc Arg	tgc Cys	cag Gln	2945
cag Gln 955	ggt Gly	ggc Gly	att Ile	gat Asp	acg Thr	cgc Arg 960	att Ile	cgg Arg	ggg Gly	tta Leu	gag Glu 965	atc Ile	cta Leu	ggc Gly	ccc Pro	2993
aag Lys 970	ccc Pro	acg Thr	ttc Phe	tgg Trp	cca Pro 975	gtg Val	ttc Phe	cgg Arg	gag Glu	cag Gln 980	ctc Leu	tgt Cys	cgt Arg	cac His	aca Thr 985	3041
cgc Arg	ctc Leu	ttc Phe	tac Tyr	atg Met 990	gtt Val	cgg Arg	gca Ala	cag Gln	gcc Ala 995	tgg Trp	agc Ser	cag Gln	gac Asp	atg Met 1000	gca Ala	3089
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iu-99.ST25.txt															
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Gln	Phe	His	Val	Tyr	Gln	Leu	Gln	Gln	Leu	Asp	Gln	Glu	Leu	Leu	
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Asn	Glu	Asp	Leu	Tyr	Tyr	Glu	Gly	Ala	Met	Pro	Glu	Val	Ser	Val	
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Leu	Val	Leu	Ser	Arg	His	Ser	Trp	Pro	Val	Ala	Ser	Ile	Cys	His	
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ggc cag aac ttg gag aag aga cgg aat ctt ctg aac tgc ctc atc	4799
Gly Gln Asn Leu Glu Lys Arg Arg Asn Leu Leu Asn Cys Leu Ile	
1560 1565 1570	
gtc cga atc ctc aag gcc cat gga gat gag ggg ctg cac att gac	4844
Val Arg Ile Leu Lys Ala His Gly Asp Glu Gly Leu His Ile Asp	
1575 1580 1585	
cag ctt gtc tgt ctg gtg ctg gag gct tgg cag aag ggc ccg tgt	4889
Gln Leu Val Cys Leu Val Leu Glu Ala Trp Gln Lys Gly Pro Cys	
1590 1595 1600	
cct ccc agg ggt ttg gtc agc agc ctt ggt aag ggg tct gca tgc	4934
Pro Pro Arg Gly Leu Val Ser Ser Leu Gly Lys Gly Ser Ala Cys	
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Ala Val Pro Val Thr Val Met Glu Pro His Thr Glu Ser Leu Asn	
1650 1655 1660	
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Pro Gly Ser Ser Gly Pro Asn Pro Pro Leu Thr Phe His Thr Leu	
1665 1670 1675	
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1680 1685 1690	
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 <212> PRT
 <213> homo sapiens

<400> 4

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Gly Leu His Ala Tyr Pro Asp Glu Leu Ile Arg Gln Arg Val Gly His
 Page 22

20

25

30

Asp Gly His Pro Glu Tyr Gln Ile Arg Trp Leu Ile Leu Arg Arg Gly
 35 40 45

Asp Glu Gly Asp Gly Gly Ser Gly Gln Val Asp Cys Lys Ala Glu His
 50 55 60

Ile Leu Leu Trp Met Ser Lys Asp Glu Ile Tyr Ala Asn Cys His Lys
 65 70 75 80

Met Leu Gly Glu Asp Gly Gln Val Ile Gly Pro Ser Gln Glu Ser Ala
 85 90 95

Gly Glu Val Gly Ala Leu Asp Lys Ser Val Leu Glu Glu Met Glu Thr
 100 105 110

Asp Val Lys Ser Leu Ile Gln Arg Ala Leu Arg Gln Leu Glu Glu Cys
 115 120 125

Val Gly Thr Ile Pro Pro Ala Pro Leu Leu His Thr Val His Val Leu
 130 135 140

Ser Ala Tyr Ala Ser Ile Glu Pro Leu Thr Gly Val Phe Lys Asp Pro
 145 150 155 160

Arg Val Leu Asp Leu Leu Met His Met Leu Ser Ser Pro Asp Tyr Gln
 165 170 175

Ile Arg Trp Ser Ala Gly Arg Met Ile Gln Ala Leu Ser Ser His Asp
 180 185 190

Ala Gly Thr Arg Thr Gln Ile Leu Leu Ser Leu Ser Gln Gln Glu Ala
 195 200 205

Ile Glu Lys His Leu Asp Phe Asp Ser Arg Cys Ala Leu Leu Ala Leu
 210 215 220

Phe Ala Gln Ala Thr Leu Ser Glu His Pro Met Ser Phe Glu Gly Ile
 225 230 235 240

Gln Leu Pro Gln Val Pro Gly Arg Val Leu Phe Ser Leu Val Lys Arg
 245 250 255

Tyr Leu His Val Thr Ser Leu Leu Asp Gln Leu Asn Asp Ser Ala Ala
 260 265 270

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Glu Pro Gly Ala Gln Asn Thr Ser Ala Pro Glu Glu Leu Ser Gly Glu
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Arg Gly Gln Leu Glu Leu Glu Phe Ser Met Ala Met Gly Thr Leu Ile
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Ser Glu Leu Val Gln Ala Met Arg Trp Asp Gln Ala Ser Asp Arg Pro
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Arg Ser Arg Arg Phe Arg Pro Arg Ser Glu Phe Ala Ser Gly Asn Thr
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Tyr Ala Leu Tyr Val Arg Asp Thr Leu Gln Pro Gly Met Arg Val Arg
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Met Leu Asp Asp Tyr Glu Glu Ile Ser Ala Gly Asp Glu Gly Glu Phe
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Arg Gln Ser Asn Asn Gly Val Pro Pro Val Gln Val Phe Trp Glu Ser
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Thr Gly Arg Thr Tyr Trp Val His Trp His Met Leu Glu Ile Leu Gly
420 425 430

Phe Glu Glu Asp Ile Glu Asp Met Val Glu Ala Asp Glu Tyr Gln Gly
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Arg Pro Met Thr Glu Leu Tyr Ala Val Pro Tyr Val Leu Pro Glu Asp
465 470 475 480

Glu Asp Thr Glu Glu Cys Glu His Leu Thr Leu Ala Glu Trp Trp Glu
485 490 495

Leu Leu Phe Phe Ile Lys Lys Leu Asp Gly Pro Asp His Gln Glu Val
500 505 510

Leu Gln Ile Leu Gln Glu Asn Leu Asp Gly Glu Ile Leu Asp Asp Glu
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Asn Cys His Val Tyr Lys Lys Tyr Gly Pro Glu Ala Leu Ala Gly Asn
565 570 575

Gln Ala Tyr Pro Ser Leu Leu Glu Ala Gln Glu Asp Val Leu Leu Leu
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Asp Ala Gln Ala Gln Ala Lys Asp Ser Glu Asp Ala Ala Lys Val Glu
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Ala Lys Glu Pro Pro Ser Gln Ser Pro Asn Thr Pro Leu Gln Arg Leu
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Val Glu Gly Tyr Gly Pro Ala Gly Lys Ile Leu Leu Asp Leu Glu Gln
625 630 635 640

Ala Leu Ser Ser Glu Gly Thr Gln Glu Asn Lys Val Lys Pro Leu Leu
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Leu Gln Leu Gln Arg Gln Pro Gln Pro Phe Leu Ala Leu Met Gln Ser
660 665 670

Leu Asp Thr Pro Glu Thr Asn Arg Thr Leu His Leu Thr Val Leu Arg
675 680 685

Ile Leu Lys Gln Leu Val Asp Phe Pro Glu Ala Leu Leu Leu Pro Trp
690 695 700

His Glu Ala Val Asp Ala Cys Met Ala Cys Leu Arg Ser Pro Asn Thr
705 710 715 720

Asp Arg Glu Val Leu Gln Glu Leu Ile Phe Phe Leu His Arg Leu Thr
725 730 735

Ser Val Ser Arg Asp Tyr Ala Val Val Leu Asn Gln Leu Gly Ala Arg
740 745 750

Asp Ala Ile Ser Lys Ala Leu Glu Lys His Leu Gly Lys Leu Glu Leu
755 760 765

Ala Gln Glu Leu Arg Asp Met Val Phe Lys Cys Glu Lys His Ala His
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iu-99.ST25.txt

Leu Tyr Arg Lys Leu Ile Thr Asn Ile Leu Gly Gly Cys Ile Gln Met
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Val Leu Gly Gln Ile Glu Asp His Arg Arg Thr His Arg Pro Ile Asn
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Ile Pro Phe Phe Asp Val Phe Leu Arg Tyr Leu Cys Gln Gly Ser Ser
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Val Glu Val Lys Glu Asp Lys Cys Trp Glu Lys Val Glu Val Ser Ser
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Asn Pro His Arg Ala Ser Lys Leu Thr Asp His Asn Pro Lys Thr Tyr
850 855 860

Trp Glu Ser Asn Gly Ser Ala Gly Ser His Tyr Ile Thr Leu His Met
865 870 875 880

Arg Arg Gly Ile Leu Ile Arg Gln Leu Thr Leu Leu Val Ala Ser Glu
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Asp Ser Ser Tyr Met Pro Ala Arg Val Val Val Cys Gly Gly Asp Ser
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Thr Ser Ser Leu His Thr Glu Leu Asn Ser Val Asn Val Met Pro Ser
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Ala Ser Arg Val Ile Leu Leu Glu Asn Leu Thr Arg Phe Trp Pro Ile
930 935 940

Ile Gln Ile Arg Ile Lys Arg Cys Gln Gln Gly Gly Ile Asp Thr Arg
945 950 955 960

Ile Arg Gly Leu Glu Ile Leu Gly Pro Lys Pro Thr Phe Trp Pro Val
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Phe Arg Glu Gln Leu Cys Arg His Thr Arg Leu Phe Tyr Met Val Arg
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995 1000 1005

His Leu Ser Ser Arg Leu Asn Gly Ala Leu Arg Gln Glu Gln Asn
1010 1015 1020

Phe Ala Asp Arg Phe Leu Pro Asp Asp Glu Ala Ala Gln Ala Leu
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Ser	Arg	Gly	Pro	Ala	Phe	Phe	Ser	Arg	Val	Arg	Arg	Leu	Thr His
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1175						1180					1185		
Pro	Arg	Ala	Ala	Phe	Leu	Leu	Ala	Leu	Gln	Asn	Gly	Cys	Ala Gly
1190						1195					1200		
Ala	Leu	Leu	Lys	Leu	Pro	Phe	Leu	Lys	Ala	Ala	His	Val	Ser Glu
1205						1210					1215		
Gln	Phe	Ala	Arg	His	Ile	Asp	Gln	Gln	Ile	Gln	Gly	Ser	Arg Ile
1220						1225					1230		
Gly	Gly	Ala	Gln	Glu	Met	Glu	Arg	Leu	Ala	Gln	Leu	Gln	Gln Cys
1235						1240					1245		
Leu	Gln	Ala	Val	Leu	Ile	Phe	Ser	Gly	Leu	Glu	Ile	Ala	Thr Thr
1250						1255					1260		

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 Val Val Ser Ser Trp Leu Glu Gly Ala Val Leu Glu Gln Ile Gly
 1280 1285 1290
 Pro Cys Phe Pro Asn Arg Leu Pro Gln Gln Met Leu Gln Ser Leu
 1295 1300 1305
 Ser Thr Ser Lys Glu Leu Gln Arg Gln Phe His Val Tyr Gln Leu
 1310 1315 1320
 Gln Gln Leu Asp Gln Glu Leu Leu Lys Leu Glu Asp Thr Glu Lys
 1325 1330 1335
 Lys Ile Gln Val Gly Leu Gly Ala Ser Gly Lys Glu His Lys Ser
 1340 1345 1350
 Glu Lys Glu Glu Glu Ala Gly Ala Ala Ala Val Val Asp Val Ala
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 Glu Gly Glu Glu Glu Glu Glu Glu Asn Glu Asp Leu Tyr Tyr Glu
 1370 1375 1380
 Gly Ala Met Pro Glu Val Ser Val Leu Val Leu Ser Arg His Ser
 1385 1390 1395
 Trp Pro Val Ala Ser Ile Cys His Thr Leu Asn Pro Arg Thr Cys
 1400 1405 1410
 Leu Pro Ser Tyr Leu Arg Gly Thr Leu Asn Arg Tyr Ser Asn Phe
 1415 1420 1425
 Tyr Asn Lys Ser Gln Ser His Pro Ala Leu Glu Arg Gly Ser Gln
 1430 1435 1440
 Arg Arg Leu Gln Trp Thr Trp Leu Gly Trp Ala Glu Leu Gln Phe
 1445 1450 1455
 Gly Asn Gln Thr Leu His Val Ser Thr Val Gln Met Trp Leu Leu
 1460 1465 1470
 Leu Tyr Leu Asn Asp Leu Lys Ala Val Ser Val Glu Ser Leu Leu
 1475 1480 1485
 Ala Phe Ser Gly Leu Ser Ala Asp Met Leu Asn Gln Ala Ile Gly
 1490 1495 1500

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Pro Leu Thr Ser Ser Arg Gly Pro Leu Asp Leu His Glu Gln Lys
1505 1510 1515

Asp Ile Pro Gly Gly Val Leu Lys Ile Arg Asp Gly Ser Lys Glu
1520 1525 1530

Pro Arg Ser Arg Trp Asp Ile Val Arg Leu Ile Pro Pro Gln Thr
1535 1540 1545

Tyr Leu Gln Ala Glu Gly Glu Asp Gly Gln Asn Leu Glu Lys Arg
1550 1555 1560

Arg Asn Leu Leu Asn Cys Leu Ile Val Arg Ile Leu Lys Ala His
1565 1570 1575

Gly Asp Glu Gly Leu His Ile Asp Gln Leu Val Cys Leu Val Leu
1580 1585 1590

Glu Ala Trp Gln Lys Gly Pro Cys Pro Pro Arg Gly Leu Val Ser
1595 1600 1605

Ser Leu Gly Lys Gly Ser Ala Cys Ser Ser Thr Asp Val Leu Ser
1610 1615 1620

Cys Ile Leu His Leu Leu Gly Lys Gly Thr Leu Arg Arg His Asp
1625 1630 1635

Asp Arg Pro Gln Val Leu Ser Tyr Ala Val Pro Val Thr Val Met
1640 1645 1650

Glu Pro His Thr Glu Ser Leu Asn Pro Gly Ser Ser Gly Pro Asn
1655 1660 1665

Pro Pro Leu Thr Phe His Thr Leu Gln Ile Arg Ser Arg Gly Val
1670 1675 1680

Pro Tyr Ala Ser Cys Thr Ala Thr Gln Ser Phe Ser Thr Phe Arg
1685 1690 1695

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iu-99.ST25.txt

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